Vendor Insight

BPM technology: IBM

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This report assesses the capabilities of IBM's BPM technology platform, and also examines the partners, professional services, advice and other intellectual property that IBM can offer customers exploring Business Process Management (BPM) implementations.

This report forms part of a series of reports from MWD which assess vendor offerings in the area of BPM technology – that is, technology-related capabilities which support organisations adopting BPM to design, develop, deploy, monitor and optimise partially- or wholly-automated business processes. For background on the analysis contained in this report, please refer to the accompanying guides, *What drives BPM technology requirements?* and *Assessing BPM technology*, which are freely available on www.mwdadvisors.com.

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Summary

IBM has a long history as a provider of process automation technology. In recent years the company has focused significant effort on building a new process management platform within its WebSphere software unit, as well as buying companies with strong technology relevant to BPM (FileNet, ILOG and Lombardi, to name but three). However, for some time the company's offering overall was primarily skewed towards the needs of software developers and architects, rather than delivering capabilities that non-specialists could get truly involved with.

With last year's release of IBM *Business Process Manager* 7.5, and the blending of WebSphere's middleware and developer-focused tools with Lombardi's business-facing features and deep strengths in lifecycle and change management, things changed fundamentally. IBM is now a serious provider of a set of well-rounded, deep BPM technology offerings. With version 8.0 of the elements in its BPM technology offering, IBM has pushed further forward in four key areas.

Firstly, it's enhanced ease-of-use for process participants through a new social-style *Process Portal* look and feel that facilitates quick and easy access to tasks even in large deployments. It's combined this with deepened use of the underlying *Performance Data Warehouse* to suggest in-process optimisations and assists for task workers, and an easy-to-digest, in-context view of historical activity for a given process instance. Users can now instigate real-time sharing of tasks with team members with synchronous viewing and collaborative editing of task information, right from within task forms ('Coaches'). The core philosophy here is that BPM technologies should make it easy for people to work together to get work done, and IBM has some nice innovations in place to support that.

Secondly, it's enhanced the lifecycle governance features presented in the already strong *Process Center,* with support for federation of assets across multiple *Process Center* instances, and the ability for administrators to specify custom processes that will be applied when process applications are deployed or when new 'snapshots' of design workspaces are taken within a project.

Thirdly, it's improved the sophistication of the *Coach Designer* tool, making it much more straightforward to design dynamic task interfaces, and also making it possible for developers to create and register reusable UI components – using the same visual *Coach Designer* tools – that designers can then consume, assemble and wire into process information model elements.

Lastly, it's also made some important ease-of-use improvements to *Business Monitor*'s configuration tools, should you want to use that to get an end-to-end view of process performance.

Business Process Manager delivers strong capabilities in support of the four kinds of BPM scenario we consider with strongest support for sequential workflow and straight-through processing. The one less strong spot right now is in the definition of business rules, which – although now based on an embedded version of IBM's very capable *IBM Operational Decision Management* product – is currently more limited in usability than the options previously available in IBM BPM technology offerings, and more limited in function than the full *ODM* product.

It's also important not to ignore *Blueworks Live*, a hosted collaborative process discovery, requirements analysis and documentation tool. *Blueworks Live* has capabilities that enable it to act as an amplifier for existing BPM Centre of Excellence (CoE) efforts, creating a 'social hub' around the work of a CoE on which customers can start to grow communities of practice. What's more, *Blueworks Live* also includes a lightweight, easy-to-use process automation capability that provides companies with an opportunity to start to exert appropriate-weight structure and control over today's unstructured, unmanaged knowledge and administration processes that are so often carried out over email.

However, although *Business Process Manager* has brought together the WebSphere and Lombardi strands of IBM's BPM technology portfolio, its FileNet investments in process and case management remain separate in its IBM *Case Manager* offering (though there is some limited runtime interoperability with *Business Process Manager* available today). Not surprisingly as a result, support for case management scenarios within *Business Process Manager* could be better – though many of the foundation capabilities you'll need to design case management applications are present.

Overview of offering

The release of *Business Process Manager* 8.0 builds on the direction that IBM started to take with its 7.5 release. With 7.5, IBM started to integrate the former Lombardi technology with its heritage WebSphere BPM-focused tools and platforms; 8.0 sees IBM's BPM technology portfolio simplify further. The Process Center repository that acted as the anchor point for that integration at the launch of 7.5 is further enhanced. *Business Process Manager* is a well-integrated product set that pulls several tools together around a common asset repository foundation.

Business Process Manager isn't the end of IBM's BPM technology offering though; *Blueworks Live* also plays a key role, particularly today around process discovery and requirements analysis and high-level design. For customers looking to implement a BPM initiative without focusing exclusively on automating process through *Business Process Manager*, *Business Monitor* is also part of the picture.

On top of its technology products, intellectual property and consulting services are important parts of IBM's BPM offering. IBM excels in providing freely-available intellectual property which helps customers and prospects understand what its technology can do. Its Redbooks and Redpapers service provides free-of-charge technology best practice guides and documentation across IBM's technology portfolio, and BPM technology is no exception.

Coverage of the BPM activity cycle

Capability	**Blueworks Live**	**Process Designer**	**Integration Designer**	**Process Center**	**Process Server**	**Process Portal**
Process improvement						
Discovery & analysis	●					
High-level design	●	●				
Simulation		●				
Optimisation		●				●
Process automation						
Technical design & development		●	●			
Rules	○	●				
Integration		●	●			
Deployment & execution	○			●	●	●
Monitoring						●

Key

○ Product has partial coverage of this capability

● Product has full coverage of this capability

Key products

As introduced above, there are three key products in IBM's BPM technology platform, as follows.

Blueworks Live

This is a hosted, collaborative process discovery and high-level design environment, coupled with simple tools for quickly creating simple process automation applications (suitable for approval and review processes, simple document workflows and so on) that run in the software-as-a-service (SaaS) environment. The process discovery and design capability is designed to be usable by non-specialists to document as-is work patterns, highlight process improvement opportunities and requirements, collaborate with peers and process specialists, and prioritise improvement initiatives based on documented business problems. Diagrams can be exported to *Process Designer* within *Business Process Manager* (see below) for further elaboration as the basis for process automation applications.

Business Monitor

This is a Business Activity Monitoring (BAM) tool designed to draw performance information in the form of operational events from a variety of middleware platforms, including, but not limited to, IBM's *Business Process Manager*, *WebSphere MQ* and *ESB*, *Operational Decision Management*, *CICS* and *IMS*.

Business Process Manager

This is a comprehensive BPM technology platform providing capabilities across design, simulation, development, integration, deployment, monitoring and optimisation. It's available in three 'editions', each of which is packaged to suit different stages or sizes of BPM implementation. The Express and Standard editions are updated and rebranded versions of the former Lombardi Teamworks platform; the Advanced edition adds a number of technologies from the WebSphere BPM toolset.

Business Process Manager has different component pieces, depending on the edition you license. The complete set of components is as follows:

- **Process Designer**. The core process application design environment in *Business Process Manager* is brought forward from Lombardi *Teamworks*, and provides BPMN-compliant graphical design tooling combined with wizard-based editors for the specification of task user interfaces, data definitions, and so on.
- **Integration Designer**. Available in the Advanced edition of *Business Process Manager*, *Integration Designer* is brought forward from the *Integration Developer* tool provided as part of the former *WebSphere Dynamic Process Edition* suite. It's another graphical process design and development environment, but instead of being aimed at business analysts, *Integration Designer* is aimed more squarely at software developers and revolves around BPEL instead of BPMN, chiefly for specifying the automated orchestration of functionality across applications and services.
- **Process Center**. Available in all three *Business Process Manager* editions, *Process Center* is a rich model asset repository for process applications. It provides features in support of lifecycle management and governance for assets across both *Process Designer* and *Integration Designer*, and also provides facilities for automating the deployment of process applications.
- **Process Server**. In the Standard and Express editions of *Business Process Manager*, the *Process Server* hosts processes designed and developed with *Process Designer*, with the additional ability to host an embedded *IBM Operational Decision Management* runtime engine. In the Advanced edition the platform looks the same from a deployment and administration perspective, but also hosts integration flows specified in *Integration Designer*, as well as providing Enterprise Service Bus (ESB) functionality.
- **Process Portal**. Available in all three *Business Process Manager* editions, *Process Portal* provides a user experience container for process participants and administrators. *Process Portal* works in concert with *Process Server* in all three *Business Process Manager* editions, and also provides monitoring and optimisation capabilities in concert with *Process Server*.

In addition to these main components of *Business Process Manager*, IBM also offers a set of 'Microsoft add-ons'. With these installed, *Business Process Manager* can use Microsoft *SharePoint* as a user experience front-end for process participants and administrators, and use Microsoft *Outlook* for delivery and launching of tasks and publication of performance reports.

Using the products

The process improvement lifecycle

Discovery and analysis

The primary tool offered by IBM for process discovery and requirements analysis is *Blueworks Live*, which provides capabilities for collaborative process discovery, high-level design and the ability to create and reuse assets from a library of templates (including, for example, high-level process templates from the APQC Process Classification Framework).

When creating high-level maps of processes, the process modeling environment in is deliberately abstract and based on a familiar 'tree outline' construct. Its primary purpose is to help non-specialists explore and refine their ideas about processes, and communicate these ideas to others. At the same time, though, models can be refined in a BPMN-compliant modeling perspective that provides more detail and more specificity.

Collaborative working between process stakeholders is facilitated through a shared 'process whiteboard' where every modeling participant sees changes as they are made (process owners specify which individuals should be able to author models, and which should be able to participate as 'reviewers' and give feedback). As analysts are refining their high-level models they can add a level of implementation detail (focused on activity ownership, inputs, outputs and so on) – and as these attributes are specified, *Blueworks Live* automatically allows all participants to explore their use across projects (so it's easy to see, for example, which activities a given Manager has oversight of). There's synchronisation between *Blueworks Live* and the *Process Designer* within *Business Process Manager*. It's also straightforward to export process documentation that's built up in collaborative *Blueworks Live* sessions as Microsoft *PowerPoint*, *Word* and *Excel* documents.

As well as enabling teams to collaborate in the discovery of processes, *Blueworks Live* can also capture elements of the strategic context for BPM initiatives, namely organisational goals and organisational problems/opportunities. Problems/opportunities can be associated with processes, enabling different processes to be analysed in the context of the potential business benefits available.

With the 2012 releases, analysts can also define decision tables right from within *Blueworks Live* by distinguishing 'business decisions' from other activities. This comes alongside the ability to document important policies and regulations, and make reference to these across process maps you define.

Within *Blueworks Live* enabling collaborative working between team members is a primary design goal; activity streams are used to surface and share changes in the project environment. Each *Blueworks Live* user can choose to follow progress of process discovery projects, process apps (see *High-level design* below) and community discussions, as well as access an IBM-curated public stream of BPM-related tweets and blogs.

For customers not interested in making a separate investment in *Blueworks Live*, there are some more limited process discovery and requirements analysis capabilities provided within the *Process Designer* of *Business Process Manager*. IBM doesn't currently offer any automated process discovery tools in its BPM technology portfolio.

High-level design

In IBM's BPM offering today, high-level design capabilities are offered by both *Blueworks Live* and *Business Process Manager's Process Designer*. If you're using *Blueworks Live*, a *Business Process Manager* installation can subscribe to a *Blueworks Live* process Blueprint, and automatically receive model updates from that environment. Further, *Process Designer* users can engage in online discussions with *Blueworks Live* users (within *Blueworks Live*) in order to bottom out requirements, refine features, and so on.

Both tools can be used to design BPMN-compliant process models with some abstract implementation details, though *Process Designer* can take those models into full implementation (see *Technical design and development* below).

Both *Blueworks Live* and *Process Designer* support standard BPMN notation for process models, and allow you to specify all the concepts you'd expect – swimlanes, activities, gateways, timers, events, exceptions, and so on. Since *Business Process Manager* 7.5, *Process Designer* takes on the collaborative editing capability that's previously been a core element *Blueworks Live* – so teams of people can work together collaboratively to refine process models.

At design time you can also instrument process models using Key Performance Indicators (KPIs) and Service Level Agreements (SLAs), which are used to drive the process monitoring environment at runtime. KPIs and SLAs can be attached to entire Business Process Diagrams (BPDs), or to individual process activities.

Process Designer uses *Process Center* as the place from where models and other assets are accessed, stored, traced and versioned. It's a particularly easy-to-use asset repository; the *Asset and change management* section below provides more information.

If you're interested in automating simple, lightweight approval-type processes that are currently managed largely via use of '*Excel* over email', *Blueworks Live* contains a very easy-to-use tool to help you specify these processes and deploy them as 'Process Apps' within the *Blueworks Live* hosted environment for those with appropriate permissions to initiate and participate in. Today, these processes have no ability to integrate with external systems however, and they can't be deployed to the *Business Process Manager* environment for on-premise deployment.

Simulation

In *Business Process Manager*, simulation functionality is provided by *Process Designer*'s Optimizer perspective, which is seamlessly integrated with the rest of *Process Designer*. At any time you can switch from design mode to simulation mode, and set up and execute simulations of various types.

The Optimizer perspective offers very strong simulation capabilities for models defined using *Process Designer*. You can set up multiple "simulation profiles" (collections of simulation parameters such as activity durations and fixed or resource-based costs, choice likelihoods, participant and group efficiencies) and then quickly create multiple analysis scenarios based on those profiles, which you can execute and then compare side-by-side in any combination you like. Simulations can cover the execution of tasks and processes defined in *Integration Designer* (see *Technical design and development* below) as well as those defined in *Process Designer*, where those elements are referenced within *Process Designer* models. Individual scenarios can work from historical data and process definitions, or currently modeled definitions – the ability to arbitrarily compare historical and current scenarios creates a powerful simulation capability. What's more, Optimizer can execute multi-process simulations, where you can simulate interactions and costs associated with multiple processes executing in parallel. This enables you to more closely model the real-world impact of proposed processes on the teams who will participate in them.

Optimizer also helps guide process modelers in resolving problems that are indicated through simulations. The Recommendations view creates step-by-step wizards that prompt users to investigate process issues, based on automated analysis of simulation outcomes.

Lastly, Optimizer provides simple facilities to enable you to export simulation data for use in other environments. You can quickly create "Live Reports" from simulation scenario data, highlighting the elements of the scenario that you're interested in (for example, the whole process; the activities enacted in one or more process swimlanes; or arbitrary sets of activities) and export report data in Microsoft *Excel* format from within Optimizer's standard user interface.

Optimisation

In IBM's BPM technology platform, you'll use the Optimizer perspective of the *Process Designer* within *Business Process Manager* for process model-level optimisation (if you're not using *Business Process Manager* then you can use *Business Monitor* for performance monitoring; but *Business Monitor* doesn't provide optimisation capabilities like the *Process Portal* does).

Process Designer's Optimizer perspective provides strong process model-level optimisation capabilities. Visualisations of historical process performance are superimposed on process models themselves, showing hotspots and bottlenecks and highlighting potential areas for optimisation. Because *Process Portal* scoreboards (collections of performance reports) are active, 'live' reports, analysts can quickly drill down into high level views to dig into performance issues and uncover root causes. Scoreboards can reference SLAs and KPIs defined within process models at design time, as well as tracking process variables representing key business information types (such as sales value, for example).

Beyond the process model-level optimisation capabilities that you get with Optimizer, *Business Process Manager* presents an increasing range of optimisation tools that act in the context of individual activities and process instances. The ability for the platform to make in-context recommendations about decisions and choices within individual Coaches at runtime, based on analysis of historical performance data, has long been a feature of IBM's offering (and Lombardi's before that) – but with version 8.0 this is enhanced further. Now, real-time analysis of *Performance Data Warehouse* data can also surface recommendations about suitable subject matter experts, based on information that's held about which people have most successfully carried out which activities in the past within each process.

The process automation cycle

Technical design and development

Technical design and development capabilities are shared between the *Process Designer* and *Integration Designer* tools within *Business Process Manager (Integration Designer* will be part of your toolset if you license the Advanced Edition of *Business Process Manager).*

If you're using the Advanced Edition of *Business Process Manager*, *Process Designer* is the tool you should use to model and develop functionality that supports long-lived business processes; you should use *Integration Designer* to specify processes that are primarily concerned with orchestration of services and back-end systems. The recommended approach for new projects is to wrap and expose *Integration Designer* process flows as reusable services, and then reference them from within 'higher-level' business process models mapped out using *Process Designer*. IBM wants customers to use both toolsets: *Process Designer* definitions will delegate technical integration and orchestration work to *Integration Designer* definitions – with *Process Designer* being used by business-facing design teams, and *Integration Designer* being used by IT development teams.

You can use *Process Designer* to model dynamic process behaviours through rich support for BPMN events as drivers of process flow, combined with support for *ad hoc* processes (which can be invoked at any time and can interact via events with other running process instances), and dynamic sub-process creation and selection. As of *Business Process Manager* 7.5, *Process Designer* implements the same collaborative editing capability that's a core element of *Blueworks Live,* so teams of people can work together collaboratively to refine process models.

Interactive activities are implemented through Coaches (task forms), which are HTML forms that you design in a graphical editor (the *Coach Designer*) built into *Process Designer*. In version 8.0, IBM has significantly overhauled the sophistication of Coach design: the result is a system in which it's much more straightforward to develop sophisticated web and mobile user interfaces. Customers can visually design Coaches from simple and aggregate UI components ('views') in the new *Coach Designer*, and can also design components themselves in that environment. All components and views within a Coach reference the same underlying model of task information, so complicated forms that exhibit dynamic behaviours are much easier to create without scripting. Also new in version 8.0, you can specify that tasks may be completed 'in line' in the *Process Portal*'s new social-style interface (see Deployment and execution below for more detail).

Another new feature in version 8.0 is improved integration with content and document management systems through implementation of the CMIS standard. Now you can easily specify metadata for images and documents that are relevant to a particular process, and functionality is provided out of the box to allow users of Coaches to search, browse and display documents, and perform direct updates and deletions within document content.

At design time you can also instrument process models using Key Performance Indicators (KPIs) and Service Level Agreements (SLAs), which are used to drive the process monitoring environment at runtime. KPIs and SLAs can be attached to entire BPDs, or to individual process activities.

Whereas *Process Designer* is a browser-based toolset, *Integration Designer* (in keeping with IBM's other software development tools) uses Eclipse as its foundation. Whereas *Process Designer*'s process modeling uses BPMN, *Integration Designer*'s model syntax is BPEL. In line with Service Component Architecture (SCA, which is the packaging and deployment mechanism used when you deploy models from *Integration Designer*) concepts, after using *Integration Designer* to define and elaborate integration-focused process models, you then factor process activities and tasks into "service components" that you then group together as linked but independent runtime "modules" that are the units of SCA deployment.

Integration Designer is undoubtedly an IT developer's environment rather than a business-friendly abstract modeling environment. Nevertheless it implements a number of specific design concepts that help you put together processes that exhibit a degree of dynamic behaviour. First is the concept of 'selectors' which can be inserted between individual service components, to enable the flow of runtime control to be dynamically changed according to the state of the system or the environment. Second is the ability to define 'collaboration scopes' in process models, within which you can specify sets of activities and human tasks (likely concerning process exception handling) that can be arbitrarily chosen, sequenced and reworked at runtime by anyone with the right authorisation. Third is the ability to implement components using 'business state machine' models, which allow you to model flows where activities are selected and carried out primarily based on incoming events and the current state of the system at runtime, rather than being sequenced explicitly at design-time.

Although *Integration Designer* and *Process Designer* are specialised tools aimed at different audiences, they both share *Process Center* as the place from where models and other assets are accessed, stored, traced and versioned. The *Asset and change management* section below provides more information.

With *Process Center* now available as an integrated facility within both *Process Designer* and *Integration Designer*, it's now simple to specify *Integration Designer* flows which make use of *Process Designer*-modeled elements (such as forms, for example), and to specify *Process Designer* models which invoke *Integration Designer* flows.

Lastly, if you're interested in automating simple, lightweight approval-type processes that are currently managed largely via use of '*Excel* over email', *Blueworks Live* contains a very easy-to-use tool to help you specify these processes and deploy them as 'Process Apps' within the *Blueworks Live* hosted environment for those with appropriate permissions to initiate and participate in. Today, these processes have no ability to integrate with external systems however, and they can't be deployed to the *Business Process Manager* environment for on-premise deployment.

Rules

With the launch of *Business Process Manager* in 2011, IBM embedded a limited version of its *Operational Decision Management* (*ODM*, formerly *JRules*) technology into the offering. IBM now recommends that any identified business rules are implemented using this technology rather than the options previously available within *WebSphere Lombardi Edition* or *WebSphere Integration Developer / Process Server*. Any rules specified within proprietary scripts or tools in those earlier technologies are still supported in *Business Process Manager* – but going forward, the *IBM Operational Decision Management* BAL syntax is the promoted option.

In *Business Process Manager*, the rules design environment is integrated into the *Process Designer* (rather than being a separate Eclipse-based experience, like *Integration Designer*).

Currently, although the full *ODM* product supports a variety of easy-to-use rule definition paradigms (decision tables, decision trees as well as direct editing of the BAL rule syntax) only BAL syntax is currently supported in the embedded version provided with *Business Process Manager*. Also, some of the more advanced execution features of the full *ODM* technology (like Rete rule chaining) aren't supported. Where you have a requirement for these capabilities, you'll need to license *ODM*.

As was the case with the former *WebSphere Lombardi Edition* technology, it's straightforward to parameterise rules using External Process Variables (EPVs) and have those be editable at runtime through the Process Admin console. This is an important capability that makes it possible to change some rule behaviours in running applications without having to change rules themselves directly.

As with process model and other process application assets, rules are stored and managed as first-class citizens through *Process Center* and can easily be located and reused within and across BPM projects.

Integration

The integration approach you'll take with a *Business Process Manager* project will depend on the edition of the product you have. If you have the Express or Standard Edition, you'll use the simple integration capabilities offered when you specify integration tasks in *Process Designer* models – taking advantage of connectors, which are program libraries that are specialised for creating protocol connections between the *Process Server* runtime and external systems, and possibly combining these with the capabilities of an ESB investment you already have. Out-of-the-box, integration via Web service protocols and Java standard APIs are supported, and *Process Server* also ships with a set of preconfigured connectors which can be used to integrate with common external systems, including packaged enterprise applications (SAP and PeopleSoft); relational DBMSs (via JDBC or SQL stored procedure calls); and a range of technical and message-based integration mechanisms (including XML over HTTP, JMS, SMTP, flat file read/write, and Microsoft COM). Integration Definitions are first-class objects and can be easily reused from within *Process Center*.

If you have the Advanced Edition, you'll specify dedicated integration flows within *Integration Designer* that can orchestrate data across multiple systems, applications and databases, storing them as reusable services within *Process Center* and making them available for use within *Process Designer*. Within *Integration Designer* you have access to the facilities of the WebSphere Enterprise Service Bus (ESB), which can manage service communication via JMS or SOAP, and can handle XML messages or even COBOL Copybooks. You can also take advantage of WebSphere adapters, which make it easy to integrate with external systems at the protocol/format level. A wide range of external systems are supported. To implement integration at the semantic (message structure) level, you define ESB-hosted 'mediation flows' in *Integration Designer* that employ 'interface maps' and 'business object maps' to carry out message transformations.

Deployment and execution

Within *Business Process Manager*, a single Process Server runtime environment provides a unified management and execution container for the model interpretation engines previously deployed standalone by *WebSphere Lombardi Edition* and *WebSphere Process Server*.

It can also act as a container for an embedded version of the *ODM* runtime, if you're using the new recommended BAL syntax and tools for specifying business rules. If you use the Advanced Edition of *Business Process Manager* a BPMN engine and a BPEL engine will both be deployed to serve your applications, and you'll also be able to deploy and manage an ESB instance alongside.

Whatever combination of engines is being managed by *Process Server*, it works in concert with *Process Center* to create a seamless deployment and runtime version management environment, and administration point. You use *Process Center*'s wizard-like tools to package together models and 'configurations' (collections of reusable assets like integration libraries, rules, and so on) into versioned process applications and deploy these to runtime servers. As of version 8.0, *Process Center* Advanced Edition can now deploy to any mixture of Express, Standard and Advanced server instances.

Where process applications contain some elements that need to be deployed to the BPMN engine and others that need deployment to the BPEL engine, *Process Center* packages all elements together and deploys them in one operation.

The *Process Portal* provides the default environment for individual process participants to work on tasks and keep track of progress, and in version 8.0 the interface for process participants has been radically reworked. Now the default view of work that process participants have is a social-style interface. Rather than presenting work in a tabular format as most tools do, the new *Process Portal*'s default view is that of an 'intelligent list' of tasks, combined with sophisticated interactive search to help users quickly filter and find tasks to complete. Tasks are highlighted and promoted when they're overdue or at risk. On the right-hand side of the default view is a context-sensitive social activity stream, surfacing system events generated by the running *Process Server* as well as status updates from other team members. Where tasks are marked as being able to be completed 'in line', expanding a task in this list presents users with a condensed task form that can be quickly completed and dismissed. Where more complicated Coaches are required to complete tasks, these Coaches now appear in context.

More fundamentally, the redesign of the *Process Portal* also sees Coaches as integral and integrated views onto work with deeper insight into the overall state of the work and the organisation – rather than being stand-alone task forms. Central to this is a context-sensitive information panel that appears alongside every Coach by default and provides information to assist anyone working on a task, including:

- A list of recommended subject-matter experts for this process, as specified by an administrator.
- A list of recommended subject-matter experts for this activity, as automatically identified by a background task mining the Performance Data Warehouse.
- The ability to immediately request real-time collaborative help from another team member within the Coach, which allows any other team member to edit information in a shared Coach such that both parties see all changes synchronously.
- A view of all the published activity (whether published by other team members or the system) that's occurred prior to the current point in this process instance.

The *Process Portal* also provides the primary administration interface for *Business Process Manager*, although IBM also offers its *Business Space* user interface framework (previously deployed as the default container for WebSphere BPM user interface elements) as a supported alternative. All the *Process Portal* administration, monitoring, work management and optimisation features are available as *Business Space* widgets.

Monitoring

When it comes to process monitoring, IBM has two technologies on the table: the *Process Portal* within *Business Process Manager*, which is the obvious choice if you're automating processes developed using *Process Designer*, and *IBM Business Monitor*, which provides monitoring facilities in environments where you want to be able to monitor operations at a broader scope (perhaps aggregating performance views across BPMN-based processes and BPEL-based integration processes developed using *Integration Designer*), or where you're not using *Business Process Manager* as an operational process platform.

Process Portal hosts highly configurable bundles of monitoring reports ("scoreboards") for process participants and their managers to track processes developed using *Process Designer*. Scoreboards can pull together information about SLAs and KPIs defined at design time and also track process variables (as defined at design time through 'tracking groups' and 'tracking points') – and the product ships with pre-built browser-based dashboards for participants and managers. There's a variety of graphing and charting options available that enable process statistics to be presented in a friendly manner to both specialists and non-specialists. The configuration tools provided, which are likely to be easily understood by non-technical business people, are web-based, drag-and-drop tools that enable any process participant to define their own *ad hoc* reports. Like administrator-defined reports, these report definitions are stored in the *Process Center* repository alongside other project artefacts.

It's also possible to create monitoring schemes that will work across sets of related processes, to allow you to monitor the performance of cases or other concepts that exist above the level of individual process instances. Tracking points and timing intervals are designed to be shared and monitored across processes that might be involved in the same case. Scoreboards can track and highlight 'at risk' process instances, which are in danger of being completed after agreed deadlines. The configuration features of the *Process Portal* mean that you can quite easily track and alert process state elements, and highlight if these are in danger of becoming misaligned with defined thresholds.

If you use the Microsoft add-ons, all the monitoring functionality of *Process Portal* can be delivered to process participants through the *Outlook* user interface.

If you decide to use *Business Monitor* (either instead of or in addition to the *Process Portal*), version 8.0 presents some useful improvements. Primary among these is a much simpler way for administrators to create and integrate the 'monitoring contexts' that Business Monitor uses to correlate and make sense of events from different source platforms. A new wizard makes it possible to define a 'global monitoring context' that links events from different platforms, enabling you to get true end-to-end monitoring views. You can define milestones as part of monitoring contexts, and these then provide the measurement points at which sampling is carried out to drive performance reports and charts. *Business Monitor* auto-generates default dashboards that include views of performance vs. defined KPIs and individual process instance performance, as well as integrating Cognos reports if you've elected to use Cognos' BI platform as a target for performance information.

Asset and change management

With the release of *Business Process Manager*, IBM built its product set around market-leading change management capabilities for BPM and business process automation. The *Process Center* at the heart of *Business Process Manager* is easy-to-use, yet enables customers to scale their BPM efforts to multi-project programs with confidence. Because it provides a single place where all assets are stored, managed, versioned and packaged for deployment – and because it integrates seamlessly with *Process Server* instances – people working on BPM projects, regardless of the role(s) they play or tools they use, can work together and build value from one project to the next.

Support for 'snapshots' that create versions of configurations of multiple assets is particularly noteworthy, because the ability to quickly roll back and 'roll forward' workspaces between snapshots makes it easy to figure out what's changed between versions of applications. 'Toolkits' represent reusable packages of assets that can be shared across projects with ease; projects can reference different versions of the toolkit.

Change impact analysis, based on quick visualisations of which repository assets are referenced where, is also noteworthy; most BPM technology offerings available today provide weak change impact analysis features.

Process Center also acts as the central point for configuration of process application runtimes – including security configuration, versioning information, environment variables and so on. Server configuration information is managed within the domain of *WebSphere Application Server* instances running process applications – but even here, there's a central administration console where all relevant information can be stored and managed.

Process Center is also the place where you carry out process deployment to one or more servers, and deployment is a streamlined set of tasks. The full *Business Process Manager* runtime, together with appropriate process application components can be deployed and configured with a handful of mouse clicks.

With version 8.0 IBM is pushing even further forward. You can now federate multiple *Process Center* instances across and even between organisations. This will make it easier to run large BPM programs and Centres of Excellence (COEs) within large, distributed organisations, and is also something that enables IBM to run its own *Process Center* containing 'community content' for its customers to share in their own environments. The *Process Center* now also supports the Open Services Lifecycle (OSLC) development lifecycle integration specification, meaning that *Process Center* artefacts can reference, and be referenced by, other repository products supporting OSLC (including IBM's own Rational Team Concert). Lastly, within *Process Center* you can now define your own custom administrative processes that are invoked whenever a process application deployment request is made, or whenever a new process snapshot is created. This flexibility means *Business Process Manager* can work more seamlessly in environments where responsibility for managing change is distributed – for example ensuring that chains of authority are properly consulted before deploying new functionality into a business-critical operation environment.

Partners, templates and practices

Partners

IBM doesn't rely on any specific technology product partners to round out its BPM product portfolio.

IBM is currently working on growing the former Lombardi partner community and integrating that with its existing and established WebSphere partner community. There are currently around 1,000 partners worldwide registered with IBM BPM product skills.

Specialised templates and practices

With the release of *Business Process Manager*, IBM reworked its industry-specific process framework content to work with the updated tools. A new set of IBM BPM Industry Packs – prebuilt assets to help accelerate delivery of process applications for banking, healthcare, and telecommunications with *Business Process Manager* – is now available. Example scenarios targeted include core banking, payments, customer care and integrated risk management for retail banks, and enrolment, case management, employer and group management, claims management and provider collaboration for healthcare providers.

IBM pitches these industry packs as starting points for proof-of-concept projects (POCs) and implementations, rather than delivering significant amounts of 'finished' functionality for applications. They're offered as chargeable items.

Separate to these, *Blueworks Live* includes a large 'template library' that collects industry best practices together across a variety of business scenarios; these templates are provided free of charge to *Blueworks Live* customers.

IBM offers a wealth of technology implementation best practice advice and documentation through its Redbooks and Redpapers assets, all of which are available online at no cost, with no registration required. There are currently well over 100 Redbooks focused on BPM-related technology topics available at www.redbooks.ibm.com.

Services

It is no surprise that IBM has a very significant consulting capability that can assist with BPM implementations, and that IBM's consulting capability has global coverage. The company's Global Business Services (GBS) division offers a range of professional services called "IBM Business Process Management Enabled by Service-Oriented Architecture Services". The company has over 1,000 consultants with specific BPM technology training.

At the same time as announcing *Business Process Manager*, IBM also announced the creation of a new delivery organisation within its GBS unit focused on business process optimisation, together with a methodology for process improvement called the *IBM Method for Business Process Optimization*. This team and method isn't specifically aimed at helping clients implement process improvement and automation with *Business Process Manager*; rather, its aim is to help clients understand the operational implications of their strategic initiatives, and build capabilities to support their strategies with 'fit for purpose' business processes. It offers services to help clients analyse processes, identifying gaps and creating roadmaps for transformation; develop business process governance frameworks; create models for new and / or optimised business processes; and use BPM technology to better orchestrate work and integrate systems.

As well as carrying out process improvement strategy and BPM implementation consulting, IBM has a very large business process outsourcing capability which focuses on outsourcing of customer relationship management (CRM), human resources (HR), supply chain management (SCM) and finance and administration (F&A) processes.

IBM also offers the IBM Solution Implementation Standard (ISIS) which, being based on the method used by ILOG prior to that company's 2009 acquisition. has been developed and extended to include BPM assets. ISIS brings together established implementation practices from former ILOG, Lombardi and WebSphere technologies into a framework of artefacts, templates, how-to guidelines and checklists, and defines how these should be used within standard services engagements from IBM (such as Discovery Workshops, Quick Win Pilots, and Healthchecks). IBM is also working to share ISIS with its implementation partners.

Platforms and standards

Platforms

Process Designer is a desktop client for Windows. *Process Center* and *Process Server* can run on AIX, Linux, Solaris and Windows Server. *Process Server* Advanced can also run on z/OS, with native support for access to COBOL, CICS, and IMS applications.

Integration Designer tools are Eclipse-based and currently are only supported on Windows.

Process Server can use a variety of databases for operational storage: DB2, SQL Server and Oracle. The *Performance Data Warehouse* can use DB2, Oracle or SQL Server.

Process Server and *Process Center* are only supported on IBM's *WebSphere* JEE application server. WebSphere Application Server is embedded in the product, to avoid extra installation steps or license costs.

Standards

Conformance to technology and industry standards is one of the key characteristics by which IBM defines itself. For IBM's WebSphere software group, strategically speaking and in the context of the tools it offers and the way it builds products, BPM has historically been just one component of a broader focus on Service Oriented Architecture (SOA). Correspondingly, it's no surprise that within the WebSphere environment, IBM has to date built its offering around SOA-related development and architecture standards – BPEL and Service Component Architecture (SCA). Integration with external applications, systems and databases is standards-based too, by and large, with the *WebSphere ESB* providing integration services to *Process Server*. Many of the WebSphere adapters use the Java Connector Architecture (JCA) standard – but not all do.

Support for BPMN 2.0 as a modeling notation standard is now solid; BPMN import and export are both supported from *Process Designer*.

From an integration perspective, IBM supports the CMIS standard for interworking with document and content management systems, and in the context of integration across the software development and delivery lifecycle, *Business Process Manager* now supports the Open Services Lifecycle (OSLC) tool and repository integration specification.

Pricing options

As a SaaS-based application environment, *Blueworks Live* is priced per user per month. There are two levels of pricing: model editors pay USD 50 per month, and contributors pay USD10 per month. A free 30-day trial is available.

The Express Edition of *Business Process Manager* offers a restricted-use license that provides for up to four cores supporting the runtime *Process Server*, and process participant licensing for up to 200 participants. IBM won't disclose precise pricing, but will say that the cost to the customer for the Express Edition is below USD 100,000.

Pricing for Standard and Advanced Editions of *Business Process Manager* are priced based on the number of *Process Server* cores required, and on the number of *Process Designer* instances that will be accessing the *Process Center* to build and optimise process applications. There are no constraints on the numbers of end users using the *Process Portal* to perform process tasks in production.

Localisation

Blueworks Live is currently available in English only. *Process Designer*, *Process Center* and *Integration Designer* are available in English, French, Russian, Korean, Chinese (simplified and traditional), Spanish, Italian, Portuguese-Brazilian, German, Japanese, Hungarian, Czech, Polish and Romanian.

Customers localise process applications by editing resource objects that are defined as part of any application. *Process Designer* includes a resource editing tool that makes it straightforward to select locales and provide translations for resources strings used in process applications. *Business Space* and the *Process Portal* use the same localisation approach.